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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,472	10/02/2003	Richard D. Dettinger	ROC920030173US1	8488

46797 7590 03/25/2009
IBM CORPORATION, INTELLECTUAL PROPERTY LAW
DEPT 917, BLDG. 006-1
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EXAMINER	
MORRISON, JAY A	

ART UNIT	PAPER NUMBER
2168	

MAIL DATE	DELIVERY MODE
03/25/2009	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RICHARD D. DETTINGER, FREDERICK A. KULACK,
RICHARD J. STEVENS, and ERIC W. WILL

Appeal 2008-3561
Application 10/677,472
Technology Center 2100

Decided:[1] March 25, 2009

Before LANCE LEONARD BARRY, ST. JOHN COURTENAY III, and STEPHEN C. SIU, *Administrative Patent Judges.*

COURTENAY, *Administrative Patent Judge.*

DECISION ON APPEAL

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 CFR § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Data (electronic delivery).

STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-45. We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

INVENTION

The invention on appeal is directed generally to data processing. More particularly, Appellants' invention relates to accessing data through a logical framework. (Spec. 1).

ILLUSTRATIVE CLAIM

Claim 1, which further illustrates the invention, follows:

> 1. A computer-implemented method of using a logical model to query physical fields of physical data entities, comprising:
>
> providing a logical model stored in physical storage space and logically describing the physical fields, the logical model comprising logical fields corresponding to respective physical fields, and wherein each logical field is defined by the logical model to include an access method describing a manner of accessing the corresponding respective physical field; and
>
> providing a runtime component stored in physical storage space and configured to change at least one element of an abstract query to produce a modified abstract query which, when executed in the form of a transformed physical query, returns results, the modifying being directed to satisfying a result set criterion with the returned results;

> wherein the abstract query is defined with respect to at least one logical field of the logical model and wherein at least one value is specified for the at least one logical field;
>
> wherein the modified abstract query is defined with respect to the at least one logical field; and
>
> wherein the transformed physical query includes a reference to a physical field of at least one of the physical fields, the physical field corresponding to the at least one logical field.

PRIOR ART

The Examiner relies upon the following references as evidence in support of the rejection:

Chu	US 5,956,707	Sept. 21, 1999
Olson	US 2001/0016843 A1	Aug. 30, 2001

THE REJECTION

Claims 1-45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Olson and Chu.

GROUPING OF CLAIMS

(1) Appellants argue claims 1-11 as a group. (App. Br. 12-15). We will, therefore, treat claims 2-11 as standing or falling with independent claim 1.

(2) Appellants argue claims 12-18 as a group. (App. Br. 16-17). We will, therefore, treat claims 13-18 as standing or falling with independent claim 12.

(3) Appellants argue claims 19-25 and claims 33-41 as a group (App. Br. 16-17, 19). We will, therefore, treat claims 20-25 and 33-41 as standing or falling with claim independent 19.

(4) Appellants argue claims 26-32 as a group. (App. Br. 18-17). We will, therefore, treat claims 27-32 as standing or falling with independent claim 26.

(5) Appellants present no separate arguments for independent claim 42, although Appellants contend on page 19 of the principal Brief that claims 43-45 are not obvious "for reasons provided above." Because Appellants state that claim 42 recites similar limitations to claim 1 (App. Br. 13, l. 2), we will, therefore, treat claims 42-45 as standing or falling with independent claim 1.

We accept Appellants' grouping of the claims. *See* 37 C.F.R. § 41.37(c)(1)(vii) ("Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately.").

APPELLANTS' CONTENTIONS

Regarding the aforementioned groups 1-4, Appellants contend that certain claim limitations are not disclosed by the Examiner proffered combination of Olson and Chu. (App. Br. 13-19). We have enumerated the specific claim limitations argued by Appellants in the ISSUES section *infra.* We address Appellants' specific arguments for each issue in our ANALYSIS section *infra.*

EXAMINER'S RESPONSE

In the "Response to Arguments" section of the Answer, the Examiner maintains that the limitations argued by Appellants are taught and/or suggested by the combination of Olson and Chu. (Ans. 36-41).

ISSUES

We consider the following issues that flow from the contentions of the Appellants and the Examiner:

1. Have Appellants shown the Examiner erred in finding that the combination of Olson and Chu teaches and/or suggests that *each logical field definition includes an access method describing how to access the corresponding field?* (*See* claim 1, *see* commensurate language recited in independent claims 12, 19, and 42; *see* App. Br. 13).

2. Have Appellants shown the Examiner erred in finding that the combination of Olson and Chu teaches and/or suggests *defining an abstract query with respect to at least one logical field of a logical model?* (*See* independent claim 1; *see* commensurate language recited in independent claims 12, 19, 33, and 42; *see* App. Br. 14, ¶2).

3. Have Appellants shown the Examiner erred in finding that the combination of Olson and Chu teaches and/or suggests *a modified abstract query defined with respect to logical*

fields? (*See* independent claim 1, *see* commensurate language recited in independent claims 12, 19, 26, 33, and 42; *see* App. Br. 14, ¶3, and App. Br. 15, ¶2).

4. Have Appellants shown the Examiner erred in finding that the combination of Olson and Chu teaches and/or suggests *a logical model comprising logical fields corresponding to respective physical fields and each having an associated modification parameter?* (*See* independent claim 12; *see* App. Br. 16, ¶1).

PRINCIPLES OF LAW

"What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under *§ 103*." *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1742 (2007). To be nonobvious, an improvement must be "more than the predictable use of prior art elements according to their established functions." *Id.* at 1740. "Invention or discovery is the requirement which constitutes the foundation of the right to obtain a patent . . . unless more ingenuity and skill were required in making or applying the said improvement than are possessed by an ordinary mechanic acquainted with the business, there is an absence of that degree of skill and ingenuity which constitute the essential elements of every invention." *Dunbar v. Myers*, 94 U.S. 187, 197 (1876) (citing *Hotchkiss* v. *Greenwood*, 52 U.S. 248, 267 (1850)) (*Hotchkiss* v. *Greenwood* was cited with approval by the Supreme Court in *KSR*, 127 S. Ct. at 1734, 1739, 1746).

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006). Therefore, we look to Appellants' Briefs to show error in the Examiner's proffered prima facie case.

FINDINGS OF FACT

In our analysis *infra*, we rely on the following findings of fact (FF) that are supported by a preponderance of the evidence:

THE PRIMARY OLSON REFERENCE

1. Olson teaches a logical query that is matched with one or more tables at run-execution time. (Page 4, para. [0080]).
2. Olson teaches logical sources that are mapped to physical sources via a binding plan that maps every column in the virtual source to some column in the physical sources as an onto map. (Page 4, para. [0082]).
3. Olson teaches that the query designer constructs a virtual query using virtual sources where the logical design of queries is done independently of the underlying physical source. (Page 5, para. [0083]).
4. Olson teaches that binder 28 replaces references of virtual sources with physical sources where binder 28 is driven via a user-selected binding plan which has a list of source bindings that server as guidelines for search and replace. (Page 8, para. [0127]).

5. Olson teaches that "Binder 28 will receive the statement and the specified binding plan. The binder 28 will search for each virtual source, look up the corresponding physical source according to the binding plan. And replace each reference of the virtual source and virtual column with the corresponding physical source and column respectively." (Page 9, para. [0148]).

THE SECONDARY CHU REFERENCE

6. Chu teaches that target data is defined as a specified number of answers which satisfy the query conditions. (Col. 4, ll. 30-31).
7. Chu teaches that "[e]ach query includes one or more attributes. Taking, for example, an airline reservation database, the attributes will include departure city, arrival city, departure time, arrival time, cost, etc. The relaxation engine 30 relaxes the conditions of one or more of the attributes utilizing a Type Abstraction Hierarchy (TAH) structure which is stored in the TAH manager 34." (Col. 4, ll. 35-41).
8. Chu teaches that "[a]ssuming the exemplary case of an airline reservation system, the query may initially specify a departure time of 10:00. The database 14 may not include a flight which departs at this time. In this case, the relaxation engine 30 will access the hierarchical TAH structure in the TAH manager 34 to change the departure time (attribute) condition in the query rep from 10:00 to a range such as 9:30 to 10:30. The data

source manager 18 again access the database 14 with the query as modified to have the relaxed condition." (Col. 4, ll. 44-52).

9. Chu teaches that "[t]his process is repeated until the target data is obtained from the database 14, or until all relaxable conditions have been relaxed and the target data has still not been obtained. The other attribute conditions are progressively relaxed in an order which can be specified in the CoSQL query, and/or programmed into the relaxation engine 30. For example, the departure time condition can be progressively relaxed to 9:00 to 11:00, then to 8:30 to 11:30, etc. If no satisfactory answer, then relax the arrival time until answers which satisfy the relaxed conditions are obtained from the database 14." (Col. 4, ll. 53-63).

APPELLANTS' SPECIFICATION

10. Appellants' Specification discloses that "[i]n one embodiment, the user (or other entity) is given the flexibility to dictate the number of results returned for a given abstract query. More particularly, the number of results returned is controlled by modification of one or more elements of a query. This may be accomplished, for example, by configuring the logical field specifications of the data abstraction model 148 with attributes directed to the modification of an initial query containing the logical field specification." (Spec. 21, para. [0061]).

11. Appellants' Specification discloses that "while 'expansion' may be repeatedly referred to herein with respect to modifying a query element (e.g., changing a value and/or condition), such reference is for convenience of illustration only and does not limit embodiments of the invention to expansion. As such, embodiments described with respect to expansion may also be implemented with other types of modification. Other illustrative value modifications include value restriction, value truncation, statistical determination of values, etc. In this regard it is noted that 'value' as defined herein includes numerical values as well as non-numerical values." (Spec. 23, para. [0063]).
12. Appellants' Specification discloses that "[b]y way of definition, the term 'query element' refers to any aspect/constituent of a query. Thus, an element may be a value, a condition, an operator or any other aspect of a query which may be affected to change the number of results returned by a query. Thus, while the embodiments herein may describe modifications of values and/or conditions, it is understood that such embodiments are merely illustrative and, more generally, any modification of query elements is contemplated." (Spec. 23-24, para. [0063]).
13. Appellants' Specification discloses that "[t]he requesting entity (e.g., one of the applications 140) issues a query 202 as defined by the respective application query specification 142 of the requesting entity. The resulting query 202 is generally referred

> to herein as an 'abstract query' because the query is composed according to abstract (i.e., logical) fields rather than by direct reference to the underlying physical data entities in the databases 156-157. As a result, abstract queries may be defined that are independent of the particular underlying data representation used." (Spec. 12, para. [0044]).

ANALYSIS

At the outset, we consider Appellants' arguments in the Briefs only to the extent that such arguments are directed to claimed subject matter.

ISSUE 1

We decide the question of whether Appellants have shown that the Examiner erred in finding that the combination of Olson and Chu teaches and/or suggests that *each logical field definition includes an access method describing how to access the corresponding field.* (*See* claim 1, *see* commensurate language recited in independent claims 12, 19, and 42; *see* App. Br. 13).

Appellants contend that the binding plans of Olson do not include logical field definitions where *each logical field definition includes an access method describing how to access the corresponding field.* (App. Br. 13, ¶4).

We disagree for essentially the same reasons argued by the Examiner on pages 37-38 of the Answer. We note that Olson teaches logical sources that are mapped to physical sources via a binding plan. (FF 2). Olson also teaches that the query designer constructs a virtual query using virtual sources where the logical design of queries is done independently of the underlying physical source. (FF 3). As pointed out by the Examiner, a logical query taught by Olson could be executed on a multitude of data sources. (*See* FF 1; *see also* Ans. 38). Therefore, we find that Olson's logical sources and associated bindings (i.e., field mapping definitions) must necessarily *include an access method describing how to access the corresponding field* in the mapped physical source. Indeed, Appellants acknowledge that "Olson teaches executing queries in the context of a binding plan." (App. Br. 14, ¶2). Accordingly, we find that the Examiner's proffered combination of Olson and Chu teaches and/or suggests the argued limitations of where *each logical field definition includes an access method describing how to access the corresponding field.* (*See* claim 1, *see* commensurate language recited in independent claims 12, 19, and 42; *see* App. Br. 13).

ISSUE 2

We decide the question of whether Appellants have shown that the Examiner erred in finding that the combination of Olson and Chu teaches and/or suggests *defining an abstract query with respect to at least one logical field of a logical model.* (*See* independent claim 1; *see* commensurate language recited in independent claims 12, 19, 33, and 42; *see* App. Br. 14, ¶2).

Appellants aver that Olson does not teach *defining an abstract query with respect to at least one logical field of a logical model* but instead teaches executing queries in the context of a binding plan. (App. Br. 14, ¶2).

We begin our analysis by noting that Appellants' Specification expressly discloses that an abstract query is "composed according to abstract (i.e., logical) fields rather than by direct reference to the underlying physical data entities." (FF 13). Thus, we find a broad but reasonable construction of Appellants' "abstract query" clearly encompasses Olson's *logical query* that performs a query in accordance with a particular binding plan that maps the logical (i.e., abstract) query to the underlying physical sources. (*See* FF 3).

Therefore, we find that the Examiner's proffered combination of Olson and Chu teaches and/or suggests the argued limitations of *defining an abstract query with respect to at least one logical field of a logical model.* (*See* independent claim 1; *see* commensurate language recited in independent claims 12, 19, 33, and 42; *see* App. Br. 14, ¶2).

ISSUE 3

We decide the question of whether Appellants have shown that the Examiner erred in finding that the combination of Olson and Chu teaches and/or suggests *a modified abstract query defined with respect to logical fields.* (*See* independent claim 1, *see* commensurate language recited in independent claims 12, 19, 26, 33, and 42; *see* App. Br. 14, ¶3, and App. Br. 15, ¶2).

Appellants aver that "even assuming, *arguendo*, that the queries are abstract, there is no mention of modifying them." (App. Br. 14, ¶3). However, we find the secondary Chu reference clearly teaches that "relaxation engine 30 relaxes the conditions of one or more of the [query] attributes." (*See* FF 7-9). We find Chu's "relaxation" of query attributes (elements) clearly modifies the query. While Appellants argue that Chu merely teaches increasing the number of returned results instead of decreasing them, we note that decreasing the number of returned results is not claimed. Appellants claimed abstract (i.e., logical) queries are merely modified. Moreover, Appellants' Specification expressly discloses that query elements may be modified by being expanded or restricted. (*See* FF 11). Therefore, we find that the Examiner's proffered combination of Olson and Chu teaches and/or suggests the argued limitations of *a modified abstract query defined with respect to logical fields.* (*See* independent claim 1, *see* commensurate language recited in independent claims 12, 19, 26, 33, and 42; *see* App. Br. 14, ¶3, and App. Br. 15, ¶2).

ISSUE 4

We decide the question of whether Appellants have shown that the Examiner erred in finding that the combination of Olson and Chu teaches and/or suggests *a logical model comprising logical fields corresponding to respective physical fields and each having an associated modification parameter.* (*See* independent claim 12; *see* App. Br. 16, ¶1).

Appellants aver that "paragraph [0080] [of Olson] is in fact directed towards using one 'logical' query in place of using several isomorphic queries. That is in no way related to using a logical model comprising logical fields, each having an associated modification parameter. Additionally, nowhere in Olson is an associated modification parameter taught." (App. Br. 16, ¶1). However, we find the Examiner relies on the secondary Chu references for teaching the modified parameter associated with the logical fields. (Ans. 39, last paragraph). We have found *supra* (see discussion of ISSUE 3) that Chu's "relaxation" of query attributes (elements) modify the query. We note that the Examiner's rejection is based on the combination of Olson and Chu. Therefore, we find that the Examiner's proffered combination of Olson and Chu teaches and/or suggests the argued limitations of *a logical model comprising logical fields corresponding to respective physical fields and each having an associated modification parameter.* (*See* independent claim 12; *see* App. Br. 16, ¶1).

In summary, we find Appellants arguments directed to each independent claim on appeal to be unavailing for the reasons set forth above regarding ISSUES 1-4. Therefore, we sustain the Examiner's rejection of independent claims 1, 12, 19, 26, 33, and 42 as being unpatentable over the combination of Olson and Chu. Because Appellants have grouped each independent claim on appeal with its respective dependent claims, we also sustain the Examiner's rejection of each dependent claim on appeal.

CONCLUSION

Given our findings of facts and analysis set forth above regarding ISSUES 1-4, we find Appellants have not sustained the requisite burden on appeal in providing arguments or evidence persuasive of error in the Examiner's rejection of claims 1-45 as being unpatentable under 35 U.S.C. § 103(a) over the combination of Olson and Chu.

DECISION

We affirm the Examiner's decision rejecting claims 1-45 under 35 U.S.C. § 103(a).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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